



FROM THE DIRECTOR

MICHAEL ANASTASIO



Recognizing the importance of community connections

I am pleased to present this first Lawrence Livermore National Laboratory (LLNL) community report to our neighbors.

Some of you may wonder why this insert is in the paper today. Much of what we do at the Laboratory is not readily visible to our neighbors, even though LLNL has been a fixture in the Tri-Valley area for more than 52 years. We want you to learn more about us.

Our Laboratory was founded by Ernest Orlando Lawrence and Edward Teller to apply the best of science and technology to meet critical national security needs. Over the years, the nation has come to depend on the Laboratory's contributions to national security — and now also homeland security. But our scientific research is broader. It includes important programs in energy and the environment, computations, chemistry and materials science, basic physics, biotechnology, and medical technologies.

Beyond these scientific endeavors, we are also your neighbors. More than 4,500 of our 8,000 employees live in the Tri-Valley area. This equates to payroll dollars of more than \$660 million annually to the Tri-Valley alone.

Our Laboratory is "owned" by the Department of Energy (DOE)/National Nuclear Security Administration (NNSA). The University of California (UC) is under contract to manage LLNL for DOE and most of us are UC employees. As a government-owned and contractor-operated facility, the Laboratory is not permitted to offer direct donations to the many deserving organizations in our community. But we do work hard to provide in-kind support. This insert highlights some of our community-support activities as well as our HOME Campaign, or Helping Others More Effectively — an employee charitable contribution program that raises more than \$1 million annually.

Finally, I would encourage you to learn more about our Laboratory by visiting us. Our newly remodeled Discovery Center is open Monday through Friday from 1 p.m. to 4 p.m. and on Saturdays from 10 a.m. to 2 p.m. In addition, public tours are offered several days a week.

Laboratory opens its doors

Fascinating, "fantastic" and "overwhelming" were among the phrases guests used to describe their June 17 visit to the Laboratory for Community Leader Day.

Some 150 elected officials, educators, civic leaders and industry representatives from throughout the Tri-Valley and Central Valley areas took part in LLNL's second annual Community Leader Day.

They were welcomed by Laboratory Director Michael Anastasio, who reviewed some of LLNL's major achievements over the past year. They also heard about Livermore's contributions to Homeland Security and the progress of the National Ignition Facility.

Guests then had an opportunity to join escorted tours to various Laboratory facilities, including the National Atmospheric Release Advisory Center, Forensic Science Center and Advanced Computing Program facility.

Christine Saldivar, with the Pleasanton Downtown Association, was particularly interested in the Lab's relationship with the community. "The morning briefings were fantastic, especially the information about your interactions with the local communities. I'd like to hear even more about that next time."

David Berger of the City of San Ramon said, "This is the first time I've

been to the Lab, so for me it was very enjoyable...well organized and very informative. In fact, some of the information shared at the morning briefing — on your water initiatives — I will share with some colleagues interested in the same issues."

Julie Orvis, Livermore Valley Joint Unified School District board member, felt it was important to educate the community about what the Lab is doing. "The day was excellent. The briefings were a fantastic way to get a fast overview of what's going on at the Lab, and then we were able to follow it up with a detailed walk-through of some of the programs."

Former journalist and longtime observer of the Lab, Tom Riley of the Cal Rad Board of Directors, was "overwhelmed" by the changes he saw at the Lab.

"I was a science reporter for the *Oakland Tribune*



LLNL's Dan Dietrich (center) shows a hand-held radiation detector developed by the Laboratory to Chabot-Las Positas Community College's Paul Hermis and Livermore City Planning Commissioner Barbara Bailey at Community Leader Day.

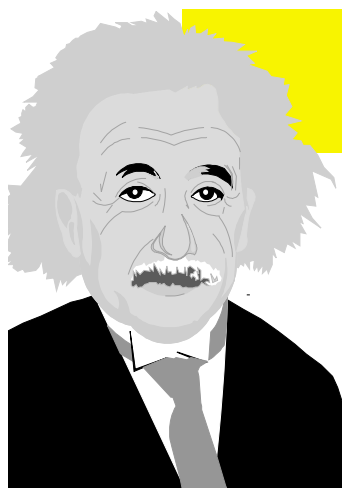
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when they set aside the property to create the Laboratory. I knew Edward Teller and Ernest Lawrence really well, when they were in their

early careers," Riley said. "I'm just swept off my feet when I look at it (the Lab) now. When I see what's here now I can't believe my eyes — the level of science is overwhelming, it's just mind-boggling."

Denise Irvin, executive assistant to the deputy superintendent for the San Joaquin County Office of Education, was impressed with the homeland security technologies demonstrated. "The tours were very informative. I'm impressed that there are technologies like this under development to protect the country."

"Interaction between the Lab and the community we live in is very important to us," Anastasio said. "We want our neighbors to be proud of what we do, and we want to continue to strengthen our connections with the community."



got science?

Lawrence Livermore National Laboratory invites you to "Discover Science Saturday," a fun-filled day showcasing science and technology for enthusiasts of all ages.

Saturday, July 24, 10 a.m. to 2 p.m.

At the Discovery Center, Greenville Road at East Gate Drive

Directions to the Discovery Center: Hwy 580 to Vasco Road; left on Patterson Pass; right on Greenville Road; follow signs to parking.

- Experience "Fun with Science" demos
- Create your own DNA jewelry
- Watch a robot at work

- Ride an energy bike
- Meet Laboratory scientists
- Enjoy the tunes of "Scientific Jam"
- And much more

Free admission

Bring the entire family

Parking available

Working with Community Leaders

The Laboratory maintains close contact with the mayor, city manager and city council members from Livermore, Pleasanton, Dublin and San Ramon. In addition, the Laboratory hosts an annual Community Leader Day, providing an overview of recent programmatic accomplishments and operational issues of interest to the community. A quarterly newsletter, "Discover LLNL," is distributed to local elected officials, civic leaders and general community members to provide information on LLNL programs and issues. The Laboratory also sends out a quarterly welcome package to new residents in Livermore, Pleasanton and Dublin, encouraging them to tour the site.



The Laboratory co-sponsors "Expanding Your Horizons" conferences designed to encourage girls to consider science-and math-based career options such as engineering, computer science and biometrics.

Working with Community Groups

The Public Affairs Office maintains active memberships in the Livermore, Pleasanton, Dublin, and San Ramon Chambers of Commerce and serves on the board of the Livermore Chamber.

Laboratory employees also serve on other area boards and are involved in a variety of community and civic activities. The Public Affairs Office maintains a Lab speakers bureau to fulfill the many speaking requests from local groups and organizations.



Hands-on "Fun with Science" demos enable students to experience science up close.

Partners in Education

As part of the University of California, LLNL has long been committed to promoting and improving science and technology education. The Laboratory's future depends on it. Through partnerships spanning every educational level, the Laboratory helps train the nation's next generation of scientists and engineers.

LLNL supports both teacher professional development and student enrichment through a variety of programs including:

The Edward Teller Science and Technology Symposium, a two-day hands-on professional development program for secondary science education and community college faculty that links science classrooms with Laboratory researchers. LLNL registers up to 150 teachers from throughout California for each symposium.

Computer Technology Workshops for Educators provide teachers with

the skills to make better use of their school's computer technology and to access teaching resources available through the Internet. The workshops are offered by LLNL for 250 teachers each year.

Fun with Science is a traveling science show conducted by LLNL researchers at schools and other public venues. Presenters demonstrate concepts in chemistry and physical and environmental sciences to entertain students and engage them in discussions about science. The Fun with Science van visits two sites each week and reaches an estimated 8,000 K-8 students a year. All presentations are offered at no cost to the school.

School Tours for Tri-Valley 4th and 5th grade classes are available October through May. The popular half-day morning tour, again provided at no cost, includes a visit to



Engineering Day brought over 300 students from valley schools to the Laboratory.



Community Partners

Partnering with the community has been a key to LLNL's success over the last

52 years. The Lab recognizes the importance of working closely with neighbors, community leaders and groups,

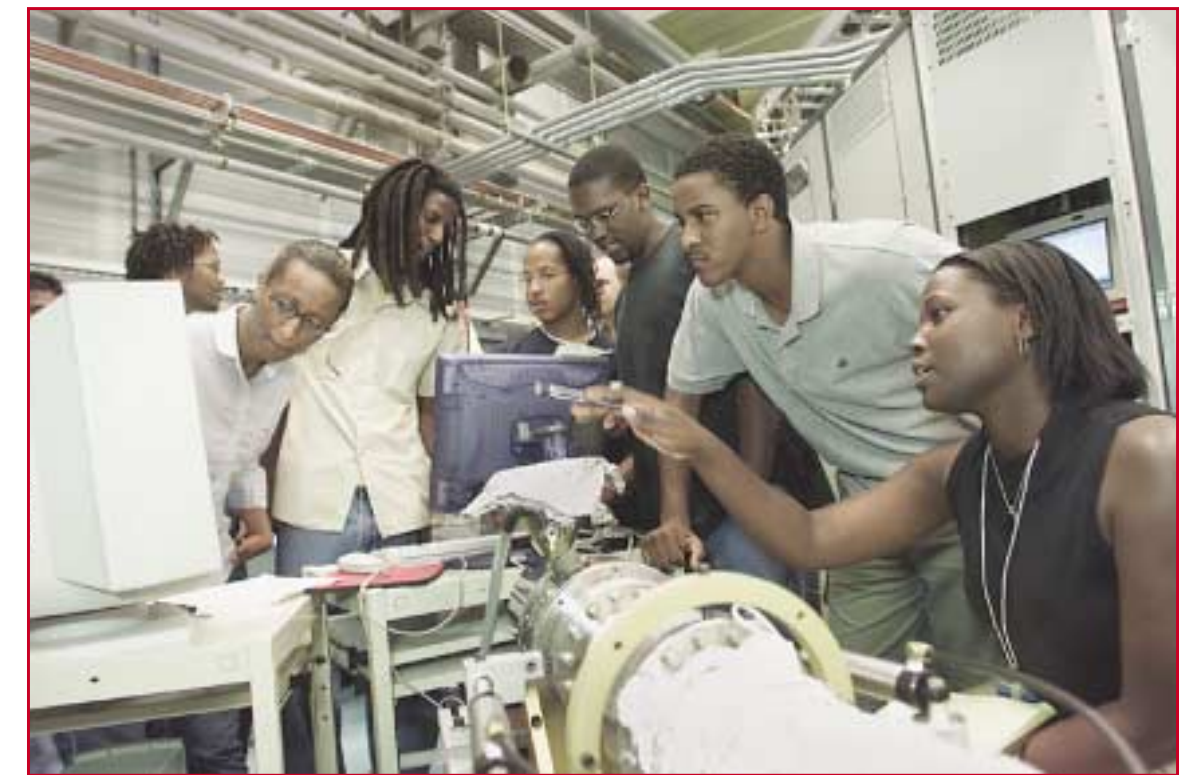
as well as public officials. Through the Public Affairs Office, the Laboratory seeks to keep the community well

informed, promote science education, address concerns and assist with a variety of community-related endeavors.

the Laboratory's Discovery Center followed by an interactive, hands-on Fun with Science show. Some 1,600 students, teachers and chaperones participate in the school tour program annually, with 90 percent of the attendees representing Livermore area schools.

The Laboratory co-sponsored **Tri-Valley Science and Engineering Fair (TVSEF)**, now in its eighth year, is a science and engineering competition for grades 7-12. A record 362 students entered projects in TVSEF 2004, representing more than 20 participating schools in Livermore, Dublin, Pleasanton, Sunol, San Ramon and Danville. Senior sweepstakes winners are invited to compete at the Intel International Science Fair.

Livermore and Sandia National Labs co-sponsor three annual **Expanding Your Horizons (EYH)** conferences for middle and high



The Laboratory's Research Collaborations Program for Historically Black Colleges and Universities and Minority Institutions exposes visiting students to LLNL's cutting-edge science and technologies.

school girls. Conferences in the Tri-Valley/San Ramon and at Mills College have been conducted for more than 25 years. The 10-year-old San Joaquin conference is held at the University of the Pacific in Stockton. EYH is intended to spark the interest of young women in mathematics and science through positive, hands-on experiences and career discussions with professionals. About 1,500 girls attend the three conferences each year.

The Laboratory hosts **Engineers Day** as part of Annual National Engineers Week to promote careers in science and engineering for students between the ages of 10 and 14. More than 600 students from Livermore, Pleasanton, Dublin, Sunol, Danville and Tracy schools attended this year.

Amigos Unidos, the Laboratory's Latino diversity group, is partnering with Livermore and Granada high schools and Junction Avenue Middle School in Livermore to provide a speaker outreach program for English language development (ELD) classes. LLNL employees of Hispanic descent attend ELD classes and discuss their school-to-career choices and experiences, and serve as positive role models.

Science on Saturday (SOS) is a five-week series of free lectures and demonstrations for students grades 6-12. Each SOS presentation is a team effort of an LLNL scientist and a local teacher, who select subjects from cutting edge science and technology research. Presentations are followed by "Science Chat," an opportunity for attendees to talk informally with that week's scientist. SOS completed its eighth year in March 2004.

Workforce Training in Response to U.S. High-Tech Industry Needs, including Laboratory missions, was created by agreements with the Chabot Las Positas Community College District. The Laboratory helped enhance the machinist program at Chabot, upgrading the shop with new equipment and providing an updated industry-driven curriculum. At Las Positas, a laser technologist certificate program was developed with Laboratory assistance. Additionally, the essential hands-on laboratory courses are taught at LLNL in laser-equipped laboratories. A laser specialist from the Laboratory is retained by the college as the trainer.

Community safety and security

Lawrence Livermore National Laboratory has joined with federal, state and local agencies to provide technologies and expertise in support of community safety and security.

The Laboratory's Homeland Security Organization is at the forefront of the nation's efforts to develop, field-test and deploy instruments that can quickly detect, identify and safeguard the public against a range of possible threats involving weapons of mass destruction. For instance, LLNL-developed biodegradation capabilities were applied at the 2002 Winter Olympic Games, and detection systems are currently in place at other locations.

The Laboratory's Forensic Science Center has developed a number of chemical and explosive detection technologies.

The National Atmospheric Release Advisory Center at LLNL has conducted real-time emergency

response assessments for incidents involving airborne releases. The Center's capabilities have been used to provide early warnings and manage emergency response by predicting the spread of industrial/chemical releases and wildfires.

At the state level, the Laboratory has provided technical support to the California Highway Patrol to develop methods for ensuring the safe delivery of large fuel trucks, and ways to stop fuel trucks if they are hijacked by terrorists. Portable radiation monitors, designed by the Laboratory, have been field-tested for Customs and Coast Guard officials at the



San Francisco Airport and the Port of Oakland.

Closer to home, the Laboratory's Fire Department, besides providing comprehensive fire protection services to the Livermore main site and Site 300 near Tracy, is responsible for coordinating mutual aid services for the Livermore-Pleasanton Fire Department, the Alameda County Fire Department, and the Tracy Fire Department.

The Fire Department also operates the Alameda County Regional Emergency Communication Center, based at the Laboratory. The regional center responds to more than 70,000 incidents each year, providing emergency fire and medical dispatch services for LLNL, the Alameda County Emergency Medical Services District, the Alameda County Fire Department, and a number of other area fire services.

Partnering with emergency response agencies helps the Laboratory develop technologies and implement vital services that enhance the safety and security of the community and nation.

Wildlife at LLNL

Many area residents may not know that there are rare and endangered plants and animals living in the midst of science and technology at LLNL, where urban Livermore meets the open space of the Altamont Hills. For many species of wildlife, this transition zone between the urban and rural is a suitable place to live.

Wildlife biologists at the Laboratory conduct plant and animal monitoring programs to track the distribution and abundance of rare and endangered species at both the Livermore main site and at Site 300, the Laboratory's experimental test site near Tracy. They help ensure that the Laboratory contributes to the conservation and poten-



tial recovery of endangered species.

Examples of wildlife at the Laboratory's main site include: the red-legged frog, a federally listed threatened species; California tiger salamander, which may soon be listed as threatened; California ground squirrel; gray fox; striped skunk; pacific tree frog; great egret; red-tailed hawk; and the common barn owl.

At Site 300, many more plants and animals abound within the 11 square miles of undeveloped land, hills and ravines. They include golden eagles, feral pigs and numerous rare species of bats, mice, amphibians,

snakes, beetles and small birds.

The diamond-petaled California poppy, once thought to be extinct, thrives along with the common fiddleneck and purple owl's clover. A notable resident is the Alameda whip-snake, a lizard-eating snake that is found in only four counties of the United States. Listed as a federally threatened reptile, it now receives national recognition as a special-status species.

Lawrence Livermore National Laboratory strives to be a good steward of its surroundings, including the habitats of the many rare and endangered plants and animals that consider Livermore and Site 300 their home.

LAB IMPACT BY THE NUMBERS

8,750 employees

Total LLNL employees. 4,590 reside in the Tri-Valley area.

\$1.6 billion

LLNL's annual budget for fiscal year '04.

\$660 million

Annual payroll base. \$429 million to the Tri-Valley area.

\$700 thousand

Approximate in-kind contributions to local education each school year.

1,300 pints

Blood donated to American Red Cross in 2003, making LLNL largest Northern California contributor.

\$600 million

Spent by LLNL on the procurement of goods and services from outside sources. More than \$260 million in California, and \$153 million in the Bay Area (FY 2003).

1,600 students

Approximate number of students (grades 4-5) who took part in Discovery Center tours and Fun with Science demonstrations at LLNL in the last school year.

2,100 students

Approximate number of students (grades 6-12) who attended an LLNL Science on Saturday presentation in the last school year.

450 students

Current number of college and university-level summer student employees at LLNL.

439 patents

Number of patents granted to LLNL by U.S. Patent and Trademark Office in the last five years.

Local leaders see big science



Photos by Jacqueline McBride and Frank Ughlig/LLNL



Top left: Forensic Science Center Director Glenn Fox displays a Gas Chromatograph-Mass Spectrometer to visitors during the Laboratory's recent Community Leader Day.

Top right: (from left) Livermore school board members Tom McLaughlin and Rebecca Hudson and Livermore School District Superintendent Brenda Miller speak with Director Michael Anastasio at Community Leader Day.



Left: John Knezovich of the Lab's Center for Accelerator Mass Spectrometry explains how the system works to Dixie and Cal Wood (far left) of the Valley Study Group, LLNL retiree T.J. Gilmartin, Tom Brengle of LLNL, Livermore Economic Development Director Kevin Roberts and Tom Riley of the Cal Rad Board of Directors.

You're invited . . .



Students visit the Discovery Center at the Laboratory.

to discover the Laboratory

The Laboratory's Discovery Center offers visitors an opportunity to learn about LLNL's rich past, as well as the many advances in science and technology that have made it one of the nation's premier national security laboratories.

Everyone is welcome at the Discovery Center. Located on Greenville Road at East Gate Drive, it is open Monday through Friday from 1–4 p.m., and recently opened on Saturdays, from 10 a.m. – 2 p.m.

In addition to the Discovery Center, the Laboratory's Public Affairs Office conducts public tours of the Laboratory on Tuesday and Thursday mornings. Tour

stops may include the National Atmospheric Release Advisory Center where scientists are able to track atmospheric releases from anywhere in the world in a matter of minutes, the Advanced Simulation Computing Program facility, which houses one of the most powerful supercomputers in the world, the world's largest laser system in the National Ignition Facility, and the Biology and Biotechnology Research Program where scientific advances are helping to improve human health and save lives.

For more information on the Laboratory's Discovery Center or tour program, visit <http://www.llnl.gov/PAO> or call the Public Affairs Office at 422-4599.

Contact us

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